This effect was more pronounced in the one-year only biosolids application. Biosolids increased tobosagrass length and standing crop in both years of the study even though both years had below average rainfall. Topical application of biosolids to tobosagrass could be a valuable alternative to increasing forage yields and to biosolids recycling.

Blue Grama Response To Biosolids And Chemical Fertilizers. *Philip E. Cooley* and *David B. Wester*, Texas Tech Univ., Lubbock, TX 79424.

The objective of this research was to compare blue grama (*Bouteloua gracilis*) response to biosolids and chemical fertilizers. One-third of the experimental units (1-m^2) received 0, 6.7, 17.0 and 33.6 dry metric tons/ha of biosolids in either the growing or dormant season one-year only. The remaining experimental units received urea or mono-ammonium phosphate (MAP) in either the growing or dormant season for three consecutive years at rates that provided an equivalent amount of plant available nitrogen as the biosolids for that year. Supplemental water was provided during the summer season to one-half of the experimental units. Plant height was monitored throughout the growing season. Standing crop was estimated at the end of the growing season by harvesting aboveground plant biomass to a 2.5 cm stubble height. One-year post application all fertilizer types produced similar standing crops regardless of season of application. Under irrigated conditions 0 and 6.7 metric tons/ha produced similar standing crop, while 17.0 and 33.6 metric tons/ha increased standing crop 18.6% and 20.2%, respectively, over the control. In non-irrigated plots standing crop was similar at all rates. Two-years post application irrigation increased standing crop. Under irrigated conditions standing crop was lowest at 17.0 and 33.6 metric tons/ha of urea, and 33.6 metric tons/ha of MAP. Terminal plant height was also shortest at the higher rates of urea and MAP. In non-irrigated plots standing crop decreased at 33.6 metric tons/ha of biosolids.

Selection Of Plant Materials For Acid And Heavy Metal Contaminated Soils. *Susan R. Winslow*[1] and *Matthew L. Marsh*[2], [1]USDA Natural Resources Conservation Service, Bridger Plant Materials Center, RR 1 Box 1189, Bridger, MT 59014; [2]Deer Lodge Valley Conservation District, Bridger, MT 59014.

A lack of commercially available plants that withstand acid and heavy metal contaminated soils prompted the development of a project to select species that demonstrate an inherent adaptibility to these sites. This is a two year project funded by a grant from the Montana Department of Natural Resources and Conservation, to the Deer Lodge Valley Conservation District, in cooperation with the USDA Natural Resources Conservation Service, Bridger Plant Materials Center. The study will progress through five distinct stages: seed/plant collection; initial evaluation; seed increase; field testing and; plant selection release to commercial seed growers. In 1994 and 1995, a total of 105 seed and vegetative collections were taken from abandoned minelands in western Montana. Two research plots (Site I and II) were established adjacent to and on the Anaconda Smelter Superfund Site respectively, and the third plot (Site III) is on the East Helena Superfund Site. Site II differs in that three rates of quick lime (CaO lime) were incorporated: 135 metric ton/ha, 67 metric ton/ha, and 0 metric ton/ha. Plots were seeded in 1995 across three replications with 89 to 99 species from a variety of sources and were evaluated for seedling vigor, stand establishment, drought tolerance, and seedhead production. Preliminary results indicate that species performing well include: 'Hycrest' *Agropyron cristatum* X *Agropyron desertorum*, *Agropyron fragile* ssp. *sibericum*, Agrostis gigantea, 'Tualatin' Arrhenatherus elatius, Deschampsia cespitosa, 'Luna' Elytrigia intermedia, 'Trailhead' *Leymus cinereus*, 'Bandera Penstemon strictus, Phacelia hastata, 'Bozoisky-Select' and 'Mankota' *Psathyrostachys juncea*, and 'Secar' *Pseudoroegneria spicata* ssp. *spicata*.

Tradeoffs Associated With Increasing Water Yield From The Edwards Plateau, Texas: Balancing Private Costs And Public Benefits. *Matthew D. Garriga, Amy P. Thurow, Thomas L. Thurow* and *J. Richard Conner*, Texas A&M Univ., College Station, TX 77843-2126.

The Edwards Plateau rangelands of Central Texas support livestock and wildlife production while simultaneously serving as the source of water recharge to the Edwards Aquifer, an important source of water in Texas. This aquifer is being pumped at a faster rate than recharge, thereby threatening the sustainability of meeting the region's existing and projected future water needs. Reducing brush cover on rangeland reduces evapotranspiration, leading to a significant increase in water yield. Increased water yields from rangelands generate public benefits but the private costs of brush control needed to increase water yield exceed the private benefits. Therefore, a publicly financed incentive system is necessary to share with private landowners the costs of brush control designed to increase water yield. The cost and benefit tradeoffs for the public and the ranch enterprise will be discussed in the context of brush control costs and the associated impacts on water, livestock, wildlife and wood product yield. These tradeoffs will be used to provide a rationale for devising a brush control financial incentive structure that will equitably represent both public and private economic interests in rangeland management.